UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

SEP 20 2018

Mr. Thomas Frick
Director
Division of Environmental Assessment & Restoration
Florida Department of Environmental Protection
Mail Station 3000
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Frick:

The U.S. Environmental Protection Agency has completed its review of the document titled *Nutrient TMDLs for Lake Adair (WBID[1] 2997R) and Documentation in Support of Development of Site-Specific Numeric Interpretations of the Narrative Nutrient Criterion*. The Florida Department of Environmental Protection (FDEP) submitted the Lake Adair Total Maximum Daily Loads (TMDLs) and revised Chapter 62-304, Florida Administrative Code (F.A.C.),[2] including the numeric nutrient criteria (NNC) for the subject water, in a letter to the EPA dated June 13, 2018, as TMDLs and as new or revised water quality standards (WQS) with the necessary supporting documentation and certification by the FDEP General Counsel, pursuant to Title 40 of the Code of Federal Regulations part 131.

The NNC were adopted under Chapter 62-304.505(21) as site specific numeric interpretations of paragraph 62-302.530(48)(b). As referenced in paragraph 62-302.531(2)(a), the FDEP intends for the submitted NNC to serve in place of the otherwise applicable criteria for lakes set out in paragraph 62-302.531(2)(b). The total nitrogen and total phosphorus TMDLs for Lake Adair would also constitute site specific numeric interpretations of the narrative nutrient criterion set forth in paragraph 62-302.530(48)(b), for this water segment.

The FDEP submitted the Lake Adair TMDLs to the EPA for review pursuant to both Clean Water Act (CWA) sections 303(c) and 303(d) since the TMDLs will also act as Hierarchy 1 (H1) site-specific interpretations of the state's narrative nutrient criterion pursuant to 62-302.531(2)(a)1.a. The EPA acknowledges that by virtue of establishing the TMDLs in chapter 62-304, the FDEP is also establishing an H1 interpretation of the narrative nutrient criteria for this waterbody as new or revised WQS. The enclosed, combined WQS and TMDL decision document summarizes the EPA's review and approval of the WQS and TMDLs.

In accordance with sections 303(c) and (d) of the CWA, I am hereby approving the TMDLs promulgated in Chapter 62-304 for Lake Adair as both TMDLs and as revised WQS for total nitrogen and total phosphorus. Any other criteria applicable to these waterbodies remain in effect, especially those related to chlorophyll *a* in paragraph 62-302.531(2)(b). The requirements of paragraph 62-302.530(48)(a) also remain applicable.

---

[1] WBID refers to waterbody identification
[2] Unless otherwise stated, all rule and subsection citations are to provisions in the Florida Administrative Code.

If you have any comments or questions relating to the approval of the H1 WQS or TMDLs, please contact me at (404) 562-9345, or have a member of your staff contact Dr. Katherine Snyder in the WQS program at (404) 562-9840 or Ms. Laila Hudda of the TMDL program at (404) 562-9007.

Sincerely,

Jeaneanne M. Gettle, Director
Water Protection Division

Enclosure

cc: Mr. Kenneth Hayman, FDEP
Mr. Daryll Joyner, FDEP
Ms. Erin Rasnake, FDEP

Florida Numeric Interpretation of the Narrative Nutrient Water Quality Criterion Through Total Maximum Daily Loads (TMDLs) to Establish a Hierarchy 1 (H1): Joint Water Quality Standards (WQS) and TMDL Decision Document

H1: Nutrient TMDL for Lake Adair (**waterbody identification** (WBID) 2997R)

ATTAINS TMDL ID: FL68603

Location: Orange County, Florida

Status: Final

Criteria Parameter(s): The Lake Adair TMDL allocation for WBID 2997R is 1,201 lbs/yr for total nitrogen (TN) and 72 lbs/yr for total phosphorus (TP) expressed as 7-year averages of annual loads, not to be exceeded.

Impairment/Pollutant: One waterbody (see next page) in the Middle St. Johns River Basin is not meeting water quality criteria for nutrients and not supporting the designated use of Class III Freshwater (fish consumption; recreation; and propagation and maintenance of a healthy, well-balanced population of fish and wildlife). An H1 was submitted by the Florida Department of Environmental Protection (FDEP) that establishes site-specific criteria for TN and TP and provides loads to address the impairment.

Background: The FDEP submitted the final H1 for the *Nutrient TMDLs for Lake Adair (WBID 2997R)* (the "report") by letter dated June 13, 2018. The draft report for Lake Adair is dated August 2017 and was received August 29, 2017. The final report dated March 2018 includes H1 target concentrations and loads. A final report was received on June 25, 2018.

The submission included:

- Submittal letter
- Nutrient TMDLs for Lake Adair and Documentation in Support of the Development of Site-Specific Numeric Interpretations of the Narrative Nutrient Criterion
- Documents related to Public Workshop
- Documents related to Public Hearing
- Documents related to Public Notice for Rulemaking and Rule Adoption
- Public Comments Received and Responses

This document explains how the submission meets the Clean Water Act (CWA) statutory requirements for the approval of WQS under section 303(c) and of TMDLs under section 303(d), and the EPA's implementing regulations in Title 40 of the Code of Federal Regulations (40 CFR) parts 131 and 130, respectively.

REVIEWERS: WQS: Katherine Snyder, WQS Coordinator, Snyder.Katherine@epa.gov
TMDL: Margaret Stebbins, ALTS Coordinator, Stebbins.Margaret@epa.gov

Waterbodies addressed in this H1 Approval Action:

Lake Adair	**WBID 2997R**	**25 acres**

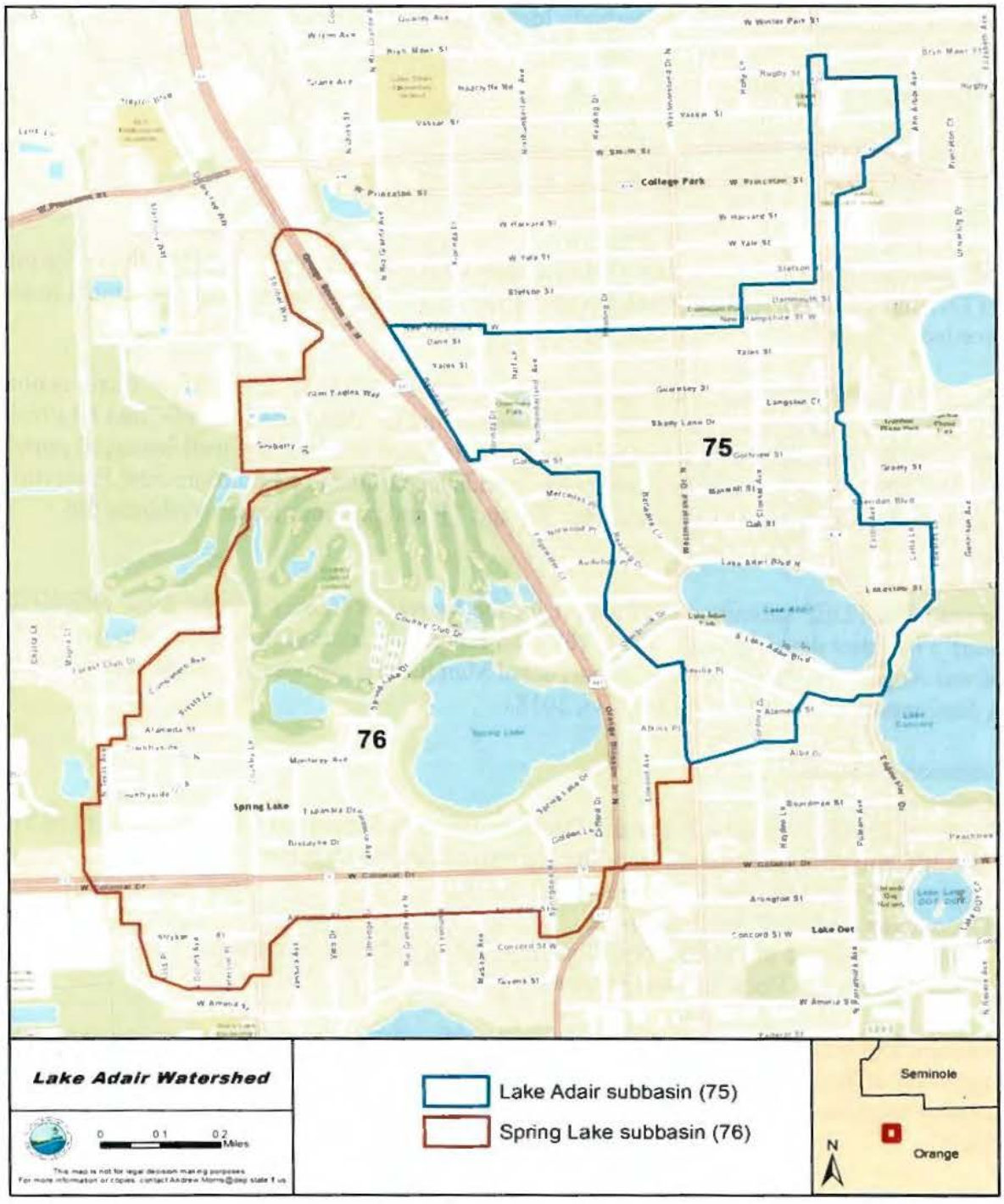

Figure 1. Lake Adair watershed.

This document contains the EPA's review of the above-referenced H1. This review document includes WQS and TMDL review guidelines that state or summarize currently effective statutory and regulatory requirements applicable to this approval action. Review guidelines are not themselves regulations. Any differences between review guidelines and the EPA's implementing regulations should be resolved in favor of the regulations themselves. The italicized sections of this document describe the EPA's statutory and regulatory requirements for approvable H1s. The sections in regular type reflect the EPA's analysis of the state's compliance with these requirements.

I. WQS Decision – Supporting Rationale

Section 303(c) of the CWA and the EPA's implementing regulations at 40 CFR section 131 describe the statutory and regulatory requirements for approvable WQS. Set out below are the requirements for WQS submissions, under the CWA and the regulations. The information identified below is necessary for the EPA to determine if a submitted WQS meets the requirements of the CWA and, therefore, may be approved by the EPA.

1. Use Designations

Section 131.10(a) provides that each state must specify appropriate water uses to be achieved and protected. The classification of the waters of the state must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial, and other purposes including navigation. In no case shall a state adopt waste transport or waste assimilation as a designated use for any waters of the United States.

Assessment: Lake Adair is classified as Class III Freshwater (fish consumption; recreation; and propagation and maintenance of a healthy, well-balanced population of fish and wildlife).

2. Protection of Downstream Uses

Section 131.10(b) provides that in designating uses of a waterbody and the appropriate criteria for those uses, the state shall take into consideration the WQS of downstream waters and shall ensure that its WQS provide for the attainment and maintenance of the WQS of downstream waters.

Rule 62-302.531(4) of the Florida Administrative Code (F.A.C.) requires that downstream uses be protected. When water levels are high, Lake Adair drains to Lake Concord via a structure located at the northeast corner of the lake. The outlet discharges to a residential stormwater pond through an underground pipe. The restoration targets of TN and TP in Lake Adair were well within the range of annual concentrations of TN and TP observed in downstream, nonimpaired Lake Concord. Therefore, the proposed target loads of TN and TP for Lake Adair associated with the lake restoration TN and TP concentrations, not to be exceeded in any year, should improve the water quality in Lake Concord.

Assessment: The H1 is providing use protection for the downstream waters.

3. Water Quality Criteria

Section 131.11(a) provides that states must adopt those water quality criteria that protect the designated use. Such criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use.

The FDEP used the Trophic Status Index (TSI) to determine that Lake Adair was impaired for nutrients for the verified period in Cycle 1 (January 1, 1996 – June 30, 2003) and subsequent assessments indicated that the NNC were also not being met. Under the revised NNC assessment methodology, Lake

Adair was found to be impaired for Chl*a*, TN, and TP and submitted to the EPA as an addition to the 303(d) list for these parameters. To establish the nutrient targets for Lake Adair, the FDEP used the generally applicable 20 µg/L Chl*a* criterion as a target because this level is considered protective of the designated use of this low-color and high alkalinity lake. See 62-302.531(2)(b), F.A.C.

The TN and TP loads identified as the site-specific TN and TP interpretations of the narrative nutrient criterion were determined by using the Hydrologic Simulation Program – FORTRAN (HSPF) watershed model and Environmental Fluid Dynamics Code (EFDC) and Water Quality Analysis Simulation Program (WASP) waterbody models to find watershed TN and TP loadings that will achieve the Chl*a* criterion of 20 µg/L. The inputs to the WASP model for Lake Adair included the Spring Lake Watershed (Subwatershed 76) loading. Water quality data collected in Lake Adair from 2003 through 2013 were used for in-lake water quality calibration. Most of the water quality data were collected from Station 21FLORL ADAIR, which was sampled by the City of Orlando during the entire simulation period from 2003 through 2013. The lake is relatively small and completely mixed. Therefore, the data from the monitoring stations were combined and compared with the WASP model simulation results averaged over the entire lake.

The simulated Chl*a* corresponding to the simulated TN and TP loads were also compared against the model-simulated natural background Chl*a* to avoid abating the natural background condition. For the natural background simulation, the wetland and water land uses in the current condition model were kept the same but all anthropogenic land uses in the current condition model were converted into forest and wetland land uses based on the hydrologic soil group classification. Anthropogenic land uses with Class A and B soils were converted to forests, and anthropogenic land uses with Class C, D, and dual category soils were converted to wetlands.

The final TN and TP concentration targets were calculated by modeling the concentrations needed to achieve the Chl*a* criterion of 20 µg/L in the lake. The final TN concentration was determined to be 0.71 mg/L and the final TP concentration was determined to be 0.044 mg/L. By utilizing the water quality models listed above, the FDEP established nutrient loads that attain the target TN and TP concentrations and Chl*a* criterion. The developed TMDLs "are the site-specific numeric interpretations of the narrative nutrient criterion for Lake Adair" (page 16 of the report).

Assessment: The Lake Adair TMDL allocation is 1,201 lbs/yr for TN and 72 lbs/yr for TP expressed as 7-year averages of annual loads, not to be exceeded. The loads were derived from watershed model TN and TP lake targets of 0.044 mg/L for TP and 0.71 mg/L for TN expressed as long term average annual geometric means (AGMs). The concentrations are given for comparative purposes only. The criteria are expressed as loads. The resulting water quality will protect the designated uses for this waterbody. Any other criteria applicable to this waterbody remain in effect, including chlorophyll *a* (Chl*a*) set out in 62-302.531(2)(b) F.A.C.

4. Scientific Defensibility

Section 131.11(b) provides that, in establishing criteria, states should establish numerical values based on 304(a) guidance, 304(a) guidance modified to reflect site-specific conditions, or other scientifically defensible methods.

Lake Adair was verified for impairment for nutrients based upon TSI data during the verified period in 2003 and subsequent assessments indicated that the generally applicable NNC were also not being met.

This TMDL document based the TN and TP targets on the generally applicable Chl*a* criterion of 20 µg/l for low color and high alkalinity lakes including Lake Adair. The loads were derived from watershed model TN and TP in-lake targets of 0.044 mg/L for TP and 0.71 mg/L for TN expressed as long term average AGMs. The concentrations are given for comparative purposes only. These values correspond to long term (7-year) averages of annual loads of TN of 1,201 lbs/yr and TP of 72 lbs/yr. The resulting water quality is expected to protect the designated uses for this waterbody.

Assessment: The EPA determined that the selection of a Chl*a* value of 20 µg/L as the response variable target is appropriate and the technical approach to calculate the total watershed nutrient loads is scientifically sound. These approaches which include the HSPF, EFDC, and WASP models to calculate the total watershed nutrient loads are described in the report.

5. Public Participation

Section 131.20(b) provides that states shall hold a public hearing when revising WQS, in accordance with provisions of state law and the EPA's public participation regulation (40 CFR part 25). The proposed WQS revision and supporting analyses shall be made available to the public prior to the hearing.

A public workshop was conducted by the FDEP on September 23, 2016, in Orlando, Florida and April 13, 2017, in Sanford, Florida to obtain comments on the draft nutrient TMDLs for Lake Adair. The workshop notice indicated that the nutrient TMDLs, if adopted, constitute site-specific numeric interpretations of the narrative criterion set forth in paragraph 62-302.530(48)(b), F.A.C., that would replace the otherwise applicable NNC in subsection 62-302.531(2), F.A.C., for these particular waters. The FDEP also held a public hearing on September 28, 2017 in Orlando, Florida.

Assessment: The FDEP has met the public participation requirements for this H1.

6. Certification by the State Attorney General

Section 131.6(e) requires that the state provide a certification by the state Attorney General or other appropriate legal authority within the state that the WQS were duly adopted pursuant to state law.

A letter from the FDEP General Counsel, Robert A. Williams, dated June 13, 2018, certified that the Lake Adair TMDLs were duly adopted as WQS pursuant to State law.

Assessment: The FDEP has met the requirement for Attorney General certification for this H1.

7. Endangered Species Section 7 Consultation

Section 7(a)(2) of the Endangered Species Act (ESA) requires federal agencies, in consultation with the Services, to ensure that their actions are not likely to jeopardize the continued existence of federally listed species or result in the destruction or adverse modification of designated critical habitat of such species.

The existing default numeric nutrient criteria for the waterbody received concurrence by U.S. Fish and Wildlife Service (USFWS) on July 31, 2013. Because the site-specific criterion for TP in this report are within the default criteria, an additional ESA section 7 consultation for this standards action is not required.

USFWS provided concurrence with the EPA's programmatic consultation on site-specific nutrient criteria for Florida on July 21, 2015, for any site-specific nutrient criteria that are more stringent than the existing default nutrient criteria in place in the state of Florida for the waterbody. Because the site-specific criterion in this report for TN are more stringent than the default criteria, an additional ESA section 7 consultation for this standards action is not required.

Assessment: The EPA has met the ESA requirements for this action.

II. TMDL Review

Section 303(d) of the CWA and the EPA's implementing regulations at 40 CFR Part 130 set out the statutory and regulatory requirements for an approvable TMDL. The following information is generally necessary for the EPA to determine if a submitted TMDL fulfills the legal requirements for approval under section 303(d) and the EPA regulations and should be included in the submittal package. Use of the verb "must" below denotes information that is required to be submitted because it relates to elements of the TMDL required by the CWA and by regulation.

1. Description of Waterbody, Pollutant of Concern, and Pollutant Sources

The TMDL analytical document must identify the waterbody as it appears on the state's 303(d) list, including the pollutant of concern. The TMDL submittal must include a description of the point and nonpoint sources of the pollutant of concern, including the magnitude and location of the sources. Where it is possible to separate natural background from nonpoint sources, a description of the natural background must be provided, including the magnitude and location of the source(s). Such information is necessary for the EPA's review of the load and wasteload allocations, which is required by regulation. The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as: (1) the assumed distribution of land use in the watershed; (2) population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources; (3) present and future growth trends, if taken into consideration in preparing the TMDL; and (4) explanation and analytical basis for expressing the TMDL through surrogate measures, if applicable. Surrogate measures are parameters such as percent fines and turbidity for sediment impairments or Chlorophyll a and phosphorus loadings for excess algae.

As mentioned in Section I-3 above, Lake Adair was verified as impaired for nutrients based on elevated annual average TSI values during the Cycle 1 verified period (January 1, 1996—June 30, 2003) for the Group 2 Middle St. Johns River Basin. It is still on the section 303(d) list. At the time the Cycle 1 assessment was performed, the Impaired Surface Waters Rule (IWR) methodology used the water quality variables TN, TP, and Chl*a* to calculate annual TSI values and to interpret Florida's NNC. For the Cycle 1 assessment, Lake Adair was classified as a high-color lake and had annual mean TSI values exceeding the impairment threshold of 60 from 1996 to 2001. The IWR was amended in 2012 to incorporate the numeric interpretations of Florida's NNC, and, under the revised methodology, Lake Adair was found to be impaired for Chl*a*, TN, and TP. The Lake was submitted to the EPA as an addition to the section 303(d) list for these parameters.

No permitted National Pollutant Discharge Elimination System (NPDES) wastewater facilities that directly discharge to Lake Adair were identified in the watershed. Two NPDES Phase I MS4 permits impact Lake Adair: one owned and operated by the City of Orlando (FLS000014) and one operated by Orange County and co-permittees in the MS4 permit (FLS000011). Nonpoint sources addressed in the analysis primarily include loadings from surface runoff, groundwater seepage entering the lake, and precipitation directly onto the lake surface.

The Lake Adair watershed covers an area of 781 acres, consisting of 504 acres of the Spring Lake Subbasin and 277 acres of the Lake Adair Subbasin. Medium-density residential is predominant in the watershed, accounting for 51% of the total area. Industrial and commercial is the second leading land use type, covering 20.4%. Overall, human land use areas occupied 707 acres of the watershed, accounting for 90.5% of the total watershed area. Natural land uses, including forest/rangeland, water, and wetlands, occupied 74 acres, or 9.5%. Further discussion of sources is included in Chapter 4 of the Report.

Assessment: The EPA concludes that the FDEP has adequately identified the impaired waterbodies, the pollutant of concern, and the magnitude and location of the pollutant sources.

2. Description of the Applicable WQS and Numeric Water Quality Target

The TMDL submittal must include a description of the applicable state WQS, including the designated use(s) of the waterbody, the applicable numeric or narrative water quality criterion, and the statewide antidegradation policy. Such information is necessary for the EPA's review of the load and wasteload allocations which is required by regulation. A numeric water quality target for the TMDL (a quantitative value used to measure whether or not the applicable WQS is attained) must be identified. If the TMDL is based on a target other than a numeric water quality criterion, then a numeric expression, usually site-specific, must be developed from a narrative criterion and a description of the process used to derive the target must be included in the submittal.

As described in WQS review sections I-1 and I-3, Lake Adair is a Class III (fresh) waterbody subject to the narrative nutrient criterion in paragraph 62-302.530(48)(b), F.A.C. and the generally applicable NNC at paragraph 62-302.531(2), F.A.C. The FDEP believes that the lake-specific NNC in paragraph 62-302.531(2)(b)1 are more representative of natural conditions in the lake than the generally applicable TN and TP NNC. This action does not revise the generally applicable Chl*a* criteria.

The TN and TP concentration targets, which are 0.044 and 0.71 mg/L, respectively, were derived based on the background condition of modeling results for the nutrient concentrations needed to achieve the applicable Chl*a* criterion of 20 µg/L. Using the water quality models, the FDEP established the nutrient loads that attain the target nutrient concentrations and Chl*a* criterion. These nutrient loads are the site-specific numeric interpretations of the narrative nutrient criterion for Lake Adair. The detailed process for developing the water quality target is explained in Chapters 3 and 5 of the TMDL report and is also summarized in section I-3 above.

Assessment: The EPA concludes that the FDEP bas properly addressed its WQS when setting a numeric water quality target.

3. Loading Capacity - Linking Water Quality and Pollutant Sources

As described in the EPA guidance, a TMDL identifies the loading capacity of a waterbody for a particular pollutant. The EPA regulations define loading capacity as the greatest amount of loading that a water can receive without violating WQS (40 CFR section 130.2(f)). The loadings are required to be expressed as either mass-per-time, toxicity or other appropriate measure (40 CFR section 130.2(i)). The TMDL submittal must identify the waterbody's loading capacity for the applicable pollutant and describe the rationale for the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. In most instances, this method will be a water quality model. Supporting documentation for the TMDL analysis must also be contained in the submittal, including the basis for assumptions, strengths and weaknesses in the analytical process, results from water quality modeling, etc. Such information is necessary for the EPA's review of the load and wasteload allocations which is required by regulation.

In many circumstances, a critical condition must be described and related to physical conditions in the waterbody as part of the analysis of loading capacity (40 CFR section 130.7(c)(1)). The critical condition can be thought of as the "worst case" scenario of environmental conditions in the waterbody in which the loading expressed in the TMDL for the pollutant of concern will continue to meet WQS. Critical conditions are the combination of environmental factors (e.g., flow, temperature, etc.) that results in attaining and maintaining the water quality criterion and has an acceptably low frequency of occurrence. Critical conditions are important because they describe the factors that combine to cause a violation of WQS and will help in identifying the actions that may have to be undertaken to meet WQS.

As described in section I-3 of this decision document, the FDEP used a combination of the HSPF for watershed simulation and EFDC and WASP for waterbody simulation, focusing on the in-lake processes and the water and nutrient budgets of the lake, as discussed in Chapter 5 of the Report. The Lake Adair EFDC model hydrodynamic results were used to drive the Lake Adair WASP model, using the same approach as the Tetra-Tech-developed Lake Jesup WASP model. The Lake Jesup model report contains additional details about the EFDC and WASP models. The HSPF model simulated the hydrology and water quality conditions, the EDDC model simulated hydrodynamics, and the WASP model simulated water quality. The three models were used together to represent the watershed loading and the resulting conditions in Lake Adair.

As discussed in section 3.3 of the Report, the Chl*a* target of 20 µg/L was selected as the TMDL target for Lake Adair. The TN and TP loads as the site-specific TN and TP interpretations of the narrative nutrient criteria for Lake Adair were then determined as the watershed TN and TP loads were reduced iteratively until simulated AGM Chl*a* in Lake Adair met the Chl*a* target in each year of the simulation. When the existing TN and TP loads were reduced by 45% and 54%, respectively, the AGMs of simulated Chl*a* did not exceed the target in any single year. Therefore, the model scenario with a 45% reduction for TN and a 54% reduction for TP from the existing total loads would be protective of the designated use of Lake Adair. The restoration TP and TN concentrations are set as the AGMs of TP and TN at 0.044 and 0.71 mg/L, respectively, not to be exceeded in any year to allow the lake to achieve the Chl*a* target every year in the model simulation.

Assessment: The EPA concludes that the loading capacity, having been calculated using the EPA-reviewed water quality models, and using observed concentration data and water quality targets consistent with numeric water quality criteria, has been appropriately set at a level necessary to attain and maintain the applicable WQS. The H1 is based on a reasonable approach for establishing the relationship between pollutant loading and water quality.

4. Load Allocation (LA)

The EPA regulations require that a TMDL include LAs, which identify the portion of the loading capacity allocated to existing and future nonpoint sources and to natural background (40 CFR section 130.2(g)). Load allocations may range from reasonably accurate estimates to gross allotments (40 CFR section 130.2(g)). Where it is possible to separate natural background from nonpoint sources, load allocations should be described separately for background and for nonpoint sources.

If the TMDL concludes that there are no nonpoint sources and/or natural background, or the TMDL recommends a zero load allocation, the LA must be expressed as zero. If the TMDL recommends a zero LA after considering all pollutant sources, there must be a discussion of the reasoning behind this decision, since a zero LA implies an allocation only to point sources will result in attainment of the applicable WQS, and all nonpoint and background sources will be removed.

Because the exact boundaries between those areas of the watershed covered by the wasteload allocation (WLA) for stormwater and the LA are unknown, both the LA and the WLA for stormwater received the same percent reduction. The LA is a 54% reduction in TP and a 45% reduction in TN of the total nonpoint source loadings. As the LAs are based on the percent reduction in total loading and reductions from natural land uses are not required, the percent reductions for anthropogenic sources may be greater. It should be noted that the LA may include loading from stormwater discharges regulated by the FDEP and the water management district that are not part of the NPDES Stormwater program (see Appendix B of the Report).

Assessment: The EPA concludes that the LAs provided in the TMDL report are reasonable and will result in attainment of the WQS.

5. Wasteload Allocation (WLA)

The EPA regulations require that a TMDL include WLAs, which identify the portion of the loading capacity allocated to existing and future point sources (40 CFR section 130.2(h)). If no point sources are present or if the TMDL recommends a zero WLA for point sources, the WLA must be expressed as zero. If the TMDL recommends a zero WLA after considering all pollutant sources, there must be a discussion of the reasoning behind this decision, since a zero WLA implies an allocation only to nonpoint sources and background will result in attainment of the applicable WQS, and all point sources will be removed.

In preparing the WLAs, it is not necessary that each individual point source be assigned a portion of the allocation of pollutant loading capacity. When the source is a minor discharger of the pollutant of concern or if the source is contained within an aggregated general permit, an aggregated WLA can be assigned to the group of facilities. However, it is necessary to allocate the loading capacity among individual point sources as necessary to meet the WQS.

The TMDL submittal should also discuss whether a point source is given a less stringent wasteload allocation based on an assumption that nonpoint source load reductions will occur. In such cases, the state will need to demonstrate reasonable assurance that the nonpoint source reductions will occur within a reasonable time.

The only NPDES-permitted dischargers that discharge directly to the surface waters of Lake Adair are stormwater dischargers. There are two NPDES Phase I MS4 permits that cover stormwater collection systems in the Lake Adair watershed: the City of Orlando (FLS000014) and Orange County and co-permitees in the MS4 permit (FLS000011). WLAs for stormwater dischargers are a 54% reduction in TP and a 45% reduction in TN, which are the required percent reductions for the total TN and TP loads from all sources. No active NPDES-permitted wastewater dischargers were identified in the Lake Adair watershed.

Assessment: The EPA concludes that the WLAs provided in the TMDL report are reasonable and will result in the attainment of WQS. This is because the H1 accounts for all point sources discharging to impaired segments in the watershed and the WLAs require that TN and TP loads comply with the TMDL targets.

6. Margin of Safety (MOS)

The statute and regulations require that a TMDL include a margin of safety to account for any lack of knowledge concerning the relationship between load and wasteload allocations and water quality (CWA section 303(d)(1)(C), 40 CFR section 130.7(c)(1)). EPA 1991 guidance explains that the MOS may be implicit, i.e., incorporated into the TMDL through conservative assumptions in the analysis, or explicit, i.e., expressed in the TMDL as loadings set aside for the MOS. If the MOS is implicit, the conservative assumptions in the analysis that account for the MOS must be described. If the MOS is explicit, the loading set aside for the MOS must be identified.

The Report stated that an implicit MOS was used in the development of the Lake Adair TMDL because the TMDLs were based on the conservative decisions associated with a number of the modeling assumptions in determining assimilative capacity, like watershed loading and water quality response. For example, the model calibration and validation period was extended to the 11-year simulation to include a worst-case condition and associated model scenarios represented that water quality variables responded to the condition. In addition, the TMDL target attaining the Chl*a* NNC in all years and the

maximum annual average loads of TN and TP from 7-year average loads was determined as the site-specific TN and TP interpretations of the NNC for Lake Adair.

Assessment: The EPA concludes that the H1 incorporates an adequate margin of safety.

7. Seasonal Variation

The statute and regulations require that a TMDL be established with consideration of seasonal variations. The method chosen for including seasonal variations in the TMDL must be described (CWA section 303(d)(1)(C), 40 CFR section 130.7(c)(1)).

The model simulated the 2003 to 2014 period, which included both wet and dry years. The simulation period captures the hydrologic variability of the Lake Adair system. As described in Table A-2 of the Report, the rainfall datasets used for the model input had a spatial resolution that properly represented the spatial heterogeneity of rainfall in the watershed. The model simulated the entire watershed to evaluate how changes in watershed loads impacted lake nutrient and Chl*a* concentrations.

Assessment: The EPA concludes that seasonal variations were considered and that the H1 allocations ensure protection of WQS throughout all seasons.

8. Monitoring Plan to Track TMDL Effectiveness

EPA's 1991 document, Guidance for Water Quality-Based Decisions: The TMDL Process (EPA 440/4-91-001), recommends a monitoring plan to track the effectiveness of a TMDL, particularly when a TMDL involves both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur. Such a TMDL should provide assurances that nonpoint source controls will achieve expected load reductions, and such a TMDL should include a monitoring plan that describes the additional data to be collected to determine if the load reductions provided for in the TMDLs are occurring and leading to attainment of WQS.

The City of Orlando and the FDEP collected water quality data in Lake Adair. These entities will continue to evaluate future water quality trends in the lake. The data collected through their monitoring activities will be used to evaluate the effect of best management practices (BMPs) implemented in the watershed on the lake's TN and TP concentrations in subsequent water quality assessment cycles.

Additionally, Lake Adair is located in the Lake Jesup watershed, which is covered by a Basin Management Action Plan (BMAP). A BMAP is a TMDL implementation tool that integrates the appropriate management strategies applicable though existing water quality protection programs. The ongoing BMAP has been developed for the entire Lake Jesup watershed, and it requires implementation of restoration strategies to the Lake Adair watershed as well. Additional information regarding the Lake Jesup watershed BMAP and associated annual progress reports are available online at the FDEP's BMAP website.

Assessment: Although not a required element of the EPA's TMDL approval process, the FDEP indicated that several stakeholders would be carrying out monitoring activities in Lake Adair, which would help to gauge the progress toward attainment of WQS. The EPA is taking no action on the monitoring plan.

9. Implementation Plans

On August 8, 1997 Bob Perciasepe (EPA Assistant Administrator for the Office of Water) issued a memorandum, "New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs)," that directs Regions to work in partnership with states to achieve nonpoint source load allocations established for 303(d)-listed waters impaired solely or primarily by nonpoint sources. To this end, the memorandum asks that Regions assist states in developing implementation plans that include reasonable assurances that the nonpoint source load allocations established in the TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. The memorandum also includes a discussion of renewed focus on the public participation process and recognition of other relevant watershed management processes used in the TMDL process. Although implementation plans are not approved by the EPA, they help establish the basis for the EPA's approval of the TMDL.

As specified in the H1, Florida implements statewide regulations to address the issue of nonpoint source pollution by requiring new development and redevelopment to treat stormwater before it is discharged. The stormwater treatment requirements are integrated with other stormwater flood control requirements of the water management districts. The state's water management districts are also required (Chapter 62-40, F.A.C.) to establish stormwater Pollution Load Reduction Goals (PLRGs) and adopt them as part of a Surface Water Improvement and Management plan, other watershed plan, or rule.

As mentioned above in Section II-8 of this document, Lake Adair is located in the Lake Jesup watershed, which is covered by a BMAP that has been developed for the entire Lake Jesup watershed. The BMAP requires implementation of restoration strategies to the Lake Adair watershed as well. Lake Jesup BMAP projects in the Lake Adair Watershed are described in Section 4.2.3.7 of the Report. Additional information regarding the Lake Jesup watershed BMAP and associated annual progress reports are available online at the FDEP's BMAP website.

Assessment: Although not a required element of the TMDL approval, the FDEP discussed how information derived from the TMDL analysis process will be used to develop and implement BMPs that support implementation of the TMDL. The EPA is taking no action on the implementation portion of the submission.

10. Reasonable Assurances

EPA guidance calls for reasonable assurances when the TMDL is developed for waters impaired by both point and nonpoint sources. In a water impaired by both point and nonpoint sources, where a point source is given a less stringent wasteload allocation based on an assumption that nonpoint source load reductions will occur, reasonable assurance that the nonpoint source reductions will happen must be explained in order for the TMDL to be approvable. This information is necessary for the EPA to determine that the load and wasteload allocations will achieve WQS.

In a waterbody impaired solely by nonpoint sources, reasonable assurances that load reductions will be achieved are not required in order for a TMDL to be approvable. However, for such nonpoint source-only waters, states are strongly encouraged to provide reasonable assurances regarding achievement of load allocations in the implementation plans described in section 9, above. As described in the August 8, 1997 Perciasepe memorandum, such reasonable assurances should be included in state implementation plans and "may be non-regulatory, regulatory, or incentive-based, consistent with applicable laws and programs."

The stormwater collection systems in the Lake Adair Subbasin that are owned and operated by the City of Orlando are covered by an NPDES Phase I MS4 permit (FLS000014). For a portion of the Spring Lake Subbasin, the stormwater collection systems are operated by Orange County and co-permitees in

the MS4 permit (FLS000011). The WLA for NPDES stormwater dischargers was set as the same percent reduction required to achieve the TMDLs: 54% reduction in TP and a 45% reduction in TN.

As mentioned above, Lake Adair is located in the area covered by the Jesup Lake BMAP and is therefore currently included in the BMAP restoration activities. Many stakeholders in the Jesup Lake BMAP have completed projects in the watershed, and these activities are a good indication of the stakeholder interest and commitment in restoring Lake Adair.

Assessment: The EPA considered the reasonable assurances contained in the Report. Point sources are required to comply with their NPDES permits, which must include the requirements and assumptions of the H1. Reductions for nonpoint sources are expected to occur as a result of the incentive and voluntary programs that were already in place or will be developed as part of the BMAP with active participation of its stakeholders.

11. Public Participation

EPA policy is that there must be full and meaningful public participation in the TMDL development process. Each state must, therefore, provide for public participation consistent with its own continuing planning process and public participation requirements (40 CFR section 130.7(c)(1)(ii)). In guidance, the EPA has explained that the final TMDL submitted to the EPA for review and approval must describe the state's public participation process, including a summary of significant comments and the state's responses to those comments. When the EPA establishes a TMDL, EPA regulations require the EPA to publish a notice seeking public comment (40 CFR section 130.7(d)(2)).

Inadequate public participation could be a basis for disapproving a TMDL; however, where the EPA determines that a state has not provided adequate public participation, the EPA may defer its approval action until adequate public participation has been provided for, either by the state or by the EPA.

The FDEP published a Notice of Development of Rulemaking on April 6, 2015, to initiate TMDL development for impaired waters in the Middle St. Johns River Basin. Technical workshops for the Lake Adair TMDLs were held on September 23, 2016, and April 13, 2017, to present the general TMDL approach to local stakeholders. A rule development public workshop for the TMDLs was held on September 28, 2017. A 30-day public comment period was provided to the stakeholders. Public comments were received for the TMDLs and the FDEP prepared a responsiveness summary for the comments. The FDEP published an updated Notice of Development of Rulemaking on January 17, 2017, covering the Middle St. Johns River Basin, to address the need for TMDLs to be adopted within 1 year after the Notice of Development of Rulemaking is published.

A public workshop was conducted by the FDEP on September 29, 2017, in Casselberry, Florida, to obtain comments on the draft nutrient TMDL for Lake Adair. The workshop notice indicated that the nutrient TMDLs, if adopted, constitute site-specific numeric interpretations of the narrative criterion set forth in paragraph 62-302.530(48)(b), F.A.C., that would replace the otherwise applicable NNC in subsection 62-302.531(2), F.A.C., for these particular waters. The FDEP also held a public hearing on February 9, 2018, in Tallahassee, Florida.

No comments were received for the Lake Adair Report.

Assessment: The EPA concludes that the state involved the public during the development of the H1 and provided adequate opportunities for the public to comment on the Report.

12. Submittal Letter

A submittal letter should be included with the TMDL analytical document and should specify whether the TMDL is being submitted for a technical review or is a final submittal. Each final TMDL submitted to the EPA must be accompanied by a submittal letter that explicitly states that the submittal is a final TMDL submitted under section 303(d) of the CWA for EPA review and approval. This clearly establishes the state's intent to submit, and the EPA's duty to review, the TMDL under the statute. The submittal letter, whether for technical review or final submittal, should contain such information as the name and location of the waterbody and the pollutant(s) of concern.

Assessment: Accompanying the State's final TMDLs for nutrients was a submittal letter dated June 13, 2018, from Robert A. Williams, General Counsel, requesting the review and approval of the nutrient TMDLs for: Lake George, St. Johns River above Ocklawaha River, St Johns River below Lake George, Lake Adair, Lake Alma, Lake Searcy, and Bear Gully Lake.

III. Conclusion

The Water Protection Division is **APPROVING** the H1 NNC and TMDLs addressed by this decision document in accordance with sections 303(c) and 303(d) of the CWA, as consistent with the CWA and 40 CFR parts 131 and 130, respectively.

The H1 NNC presented in this decision document will constitute the site-specific numeric interpretation of the narrative nutrient criterion set forth in paragraph 62-302.530(48)(b), F.A.C., that will replace the otherwise applicable numeric criteria for TN and TP in subsection 62-302.531(2) for this particular water, pursuant to paragraph 62-302.531(2)(a)1.b., F.A.C. Based on the chemical, physical, and biological data presented in the development of the H1 NNC outlined above, the EPA concludes that the revised NNC for TN and TP provide for and protect healthy, well-balanced, biological communities in the waters to which the NNC apply and are consistent with the CWA and its implementing regulations at 40 CFR 131.11.

Therefore, the revised nutrient criteria for TN and TP for Lake Adair are 1,201 lbs/yr for TN and 72 lbs/yr for TP expressed as 7-year averages of annual loads, not to be exceeded. All other criteria applicable to this waterbody remain in effect, including other applicable criteria at 62-302.531(2)(b), F.A.C. The requirements of paragraph 62-302.530(48)(a), F.A.C. also remain applicable.

Furthermore, after a full and complete review, the EPA finds that the H1 for Lake Adair for TN and TP satisfies all of the elements of approvable TMDLs. This approval is for the *Nutrient TMDLs for Lake Adair (WBID 2997R)* addressing one waterbody for use impairments due to nutrients based on elevated Chl*a*, TN, and TP.